

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A color thermal printer for recording full color image by recording one color image at each of printing units during transportation of a long recording sheet by a couple of transporting rollers, a plurality of said printing units being disposed along the transporting path, each of said printing units including a platen roller for supporting said long recording sheet, and a thermal head for executing thermal recording of each color image by pressing said recording sheet which is supported by said platen roller, said color thermal printer comprising:

a rotating speed detector disposed on at least one said platen roller for detecting rotating speed of the at least one said platen roller; and

a controller for recording image by driving said thermal head of each printing unit when transporting quantity of said recording sheet transported by said transporting roller couple reaches target value corresponding to the recording start position, the controller calculating the transporting correction quantity of said recording sheet from the rotating speed fluctuation amount of the at least one said platen roller, to correct said target value so as to correspond to the recording start position of a directly downstream printing unit.

2. (original): A color thermal printer as claimed in claim 1, further comprising a memory for storing data table in which said rotating speed fluctuation amount is associated with said transporting correction quantity.

3. (original): A color thermal printer as claimed in claim 2, wherein said controller obtains said correction value by detecting said rotating speed fluctuation amount at each fixed period of time, calculates a cumulative correction quantity by accumulating the correction quantity during recording of said image, to correct said target value according to said cumulative correction quantity so as to correspond to the recording start position of said directly downstream printing unit.

4. (currently amended): A color thermal printer as claimed in claim 2, wherein said rotating speed detector is a pulse encoder which outputs pulse signal according to the rotating amount of the at least one said platen roller.

5. (original): A color thermal printer as claimed in claim 4, wherein said pulse encoder includes a disk-shaped slit plate formed with a plurality of slits which extends in a radial direction and a photoelectric sensor of a transmission type for detecting passage of said slits to output said pulse signal.

6. (currently amended): A color thermal printer as claimed in claim 2, wherein first, second and third printing units are disposed from upstream of said transporting path in sequence on one another for respectively recording yellow, magenta and cyan images, and said rotating speed detector is provided on the at least one said platen roller of said first and second printing units.

7. (currently amended): A color thermal printing method of recording full color image by recording one color image at each of printing units during transportation of a long recording sheet by a couple of transporting rollers, a plurality of said printing units being disposed along the transporting path, each of said printing units including a platen roller for supporting said long recording sheet, and a thermal head for executing thermal recording of each color image by pressing said recording sheet which is supported by said platen roller, said color thermal printing method comprising the steps of:

determining whether transporting quantity of said recording sheet by said transporting roller couple reaches target value corresponding to the recording start position;

when said transporting quantity reaches said target value, recording image by driving said thermal head of each printing unit;

detecting rotating speed of at least one said platen roller;

calculating the transporting correction quantity of the said recording sheet from rotating speed fluctuation amount of said platen roller; and

correcting said target value so as to correspond to a recording start position of a directly downstream printing unit.

8. (original): A color thermal printing method as claimed in claim 7, wherein in said correction quantity calculating step, a data table is used, and has data of said rotating speed fluctuation amount and said transporting correction quantity associated therewith.

9. (original): A color thermal printing method as claimed in claim 8, further comprising the steps of:

obtaining said correction quantity by detecting said rotating speed fluctuation amount at a fixed period of time;

calculating a cumulative correction quantity by accumulating said correction quantity during recording of said image; and

correcting said target value according to said cumulative correction quantity, so as to correspond to the recording start position of said directly downstream printing unit.

10. (currently amended): A color thermal printing method as claimed in claim 8, wherein in said speed detecting step, a rotating amount of the at least one said platen roller is detected in a stepwise manner.

11. (original): A color thermal printing method as claimed in claim 10, wherein in said speed detecting step, a pulse encoder is used for detecting said rotating amount photoelectrically.

12. (original): A color thermal printing method as claimed in claim 8, wherein first, second and third printing units are disposed from upstream of said transporting path in sequence on one another for respectively recording yellow, magenta and cyan images;

in said speed detecting step, said rotating speed in said first and second printing units is detected.

13. (new): A color thermal printer as claimed in claim 1, wherein the controller is configured to receive the rotating speed of the at least one said platen roller from the rotating speed detector.

14. (new): A color thermal printer as claimed in claim 1, wherein said controller obtains said correction value by detecting said rotating speed fluctuation amount at each fixed period of

time, calculates a cumulative correction quantity by accumulating the correction quantity during recording of said image, to correct said target value according to said cumulative correction quantity so as to correspond to the recording start position of said directly downstream printing unit.

15. (new): A color thermal printer as claimed in claim 1, wherein first, second and third printing units are disposed from upstream of said transporting path in sequence on one another for respectively recording yellow, magenta and cyan images, and said rotating speed detector is provided on the at least one said platen roller of said first and second printing units.

16. (new): A color thermal printing method as claimed in claim 7, further comprising the steps of:

obtaining said correction quantity by detecting said rotating speed fluctuation amount at a fixed period of time;

calculating a cumulative correction quantity by accumulating said correction quantity during recording of said image; and

correcting said target value according to said cumulative correction quantity, so as to correspond to the recording start position of said directly downstream printing unit.

17. (new): A color thermal printing method as claimed in claim 7, wherein first, second and third printing units are disposed from upstream of said transporting path in sequence on one another for respectively recording yellow, magenta and cyan images;

in said speed detecting step, said rotating speed in said first and second printing units is detected.

18. (new): A color thermal printer as claimed in claim 1, further comprising a front tension roller disposed downstream of the thermal head of each of the said printing units, wherein said tension roller is configured to rotate faster than said transporting roller couple when transporting said recording sheet.

19. (new): A color thermal printer as claimed in claim 18, further comprising a back tension roller, disposed upstream of said transporting roller couple, which applies back tension to said recording sheet.

20. (new): A color thermal printer as claimed in claim 1, further comprising an aligning roller, disposed upstream of said transporting roller couple, which corrects deviation in a widthwise direction of said recording sheet.

21. (new): A color thermal printer as claimed in claim 1, further comprising a color fixing lamp disposed downstream of at least one of said printing units

22. (new): A color thermal printing method as claimed in claim 7, further comprising:
imposing front tension on said recording sheet when recording the one color image, using a front tension roller disposed downstream of the thermal head of each of the said printing units, wherein the tension roller is configured to rotate faster than said transporting roller couple; and
controlling said transporting quantity when recording the one color image, using said transporting roller couple so that speed of transporting said recording sheet can be kept at rotating speed of said transporting roller couple.

23. (new): A color thermal printing method as claimed in claim 22, further comprising imposing back tension on said recording sheet when recording the one color image, using a back

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tension roller disposed upstream of said transporting roller couple, wherein said back tension is the same as said front tension so that no extra tension is applied on said recording sheet by said transporting roller couple.